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2016

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Koski , S E 2016 , ' Behavior: Warriors shaking hands ' , Current Biology , vol. 26 , pp. R756-777 . <https://doi.org/10.1016/j.cub.2016.06.058>

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<http://hdl.handle.net/10138/233762>

<https://doi.org/10.1016/j.cub.2016.06.058>

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## **Dispatch**

### Behavior: Warriors Shaking Hands

A basic precondition of social life is that conflicts must be resolved when you need each other. A new study shows that men affiliate more after one-on-one conflicts than women. This reflects the deep evolutionary history of male bonding.

Sonja E. Koski

Mention conflict management, and people tend to think of international negotiations and the United Nations, or court decisions based on societally formalized rules. However, at a very basic, day-to-day level we manage conflicts much more directly, and in much the same way as other primates do. We relax a tense situation by joking, say sorry after a hurtful action, and shake hands with a neighbor after a dispute. In other words, we make an effort to show friendly behavior to others before a potential conflict arises or, if a conflict does escalate, soon after aggression has ceased. Such conflict resolution behaviors reflect our primate roots. In a new study published in this issue of *Current Biology*, Joyce Benenson and Richard Wrangham [1] show that human conflict resolution follows the primate principles and informs us about our evolutionary history.

Conflict resolution, including affiliation after conflicts, is common in many group-living animals with individualized relationships. These behaviors have been particularly well

studied in primates. The logic is easy to understand: when conflicts arise between individuals that live in the same group with shared interests and a mutually beneficial relationship, there is a risk of losing the benefits afforded by the relationship, such as cooperation and tolerance near resources. Therefore, conflicts need to be controlled, and if unavoidable, the damage must be mitigated. After a conflict occurs, the insecurity about the future of the relationship is most commonly resolved through reconciliation: friendly behavior — for example, hugging, touching, or vocalizing in a friendly manner — directed to the former conflict opponent soon after the conflict is over [2,3]. This effectively restores the relationship to its pre-dispute state and, at the proximate level, reduces the anxiety caused by the conflict. Such reconciliation has been shown in over 30 species of primates, as well as in dolphins, goats, spotted hyenas, horses, wolves, and dogs [4]. For example, wild Japanese macaques reconcile conflicts most often with those individuals they also groom the most, and they do it within the first two minutes following a conflict [5]. Generally, the better the friend one fights with, the more necessary it is to make amends afterwards [6]. Best friends reconcile their conflicts most often simply because they have much to lose if they don't.

As the theoretical framework for conflict resolution became well established in non-human primates, it appeared that human children followed the same pattern. Children begin to reconcile conflicts early in their development, but the forms and frequency improve as they grow older. Friends tend to reconcile more often than non-friends, although there is cultural variation, and same-sex conflicts are reconciled more often than mixed-sex ones [7]. However, thus far few researchers had not investigated these basic patterns in adults.

Benenson and Wrangham applied this framework to investigate post-conflict affiliation in adult humans. In their study, matches of one-on-one sports were used as a proxy of conflicts. This is an innovative approach, as sports contests involve emotionally and physically demanding confrontational investment from the contestants, yet are standardized so that many confounding factors can be excluded and different nationalities can be included. Their findings show a consistent pattern of longer duration of post-match affiliation in men compared to women (Figure 1A). Men also touched each other more often using additional friendly gestures than women. The result was replicated consistently in three types of racket sports as well as in boxing, which confirms the robustness of the pattern. The result did not depend on conflict severity, inferred from the fraction of sets won and match duration. Importantly, the male bias was not limited to a particular culture, as the players came from 44 different countries but nationality did not predict the duration of affiliation.

Now, why is there a sex difference in favor of men in post-conflict affiliation? Beneson and Wrangham explain it with the Male Warrior hypothesis [8]. It provides a compelling explanation for human male bonding. The hypothesis proposes that men form stronger bonds with each other than women because strong bonds facilitate cooperation in aggressive, coalitionary conflicts against other groups. In other words, men need to bond to go to war together.

The logic goes as follows. Humans have had aggressive encounters with other groups for resource defense and acquisition throughout our evolutionary history [9]. Intergroup conflicts involve coalitionary aggression, which is strongly male-biased and appears to be a human universal [10]. This has probably selected for psychological mechanisms favoring in-group membership and aggression toward out-group males

[8,11]. Moreover, coalitionary aggression requires social bonds that facilitate reliable cooperation. Therefore, coalitionary intergroup aggression among men leads to behavioral and psychological mechanisms that maintain these bonds. The study by Benenson and Wrangham assessed whether these strong bonds are reflected in the expected way in post-conflict behavior. Presumably, male bonds require more investment in friendly post-conflict behavior than female bonds. The results supported the prediction: men affiliated more after contests than women.

The human male bonding pattern can be compared to our closest living relative, the chimpanzee. Chimpanzees, too, show strong male bonding and coalitionary aggression. Coalitions are used in conflicts against within-group competitors, resulting in an ever-shifting game of alliances and conflicts [12]. However, like humans, chimpanzee males also cooperate in coalitionary aggression against neighboring group males [13,14]. These between-group conflicts resemble human warfare and are thus suggestive of a long evolutionary history of male bonding for war-like conflicts in our own species [15]. Not surprisingly, chimpanzee males reconcile their conflicts more often than females (Figure 1B), although there is variation among groups depending on the quality of female–female relationships, particularly in captivity [16].

However, the study by Benenson and Wrangham also shows that human male bonding has exceeded what we find in chimpanzees. They found a male bias in post-conflict affiliation despite the fact that in the study the contestants were part of the same group only in the sense of a larger community of people practicing the same sport. This suggests that, in contrast to chimpanzees, humans have extended the basic reconciliation pattern to same-sex others that are relatively distant contest opponents. The increased tendency of men to affiliate with ‘in-group strangers’, i.e. people

identifiable as following the same set of rules, suggests that an elevated post-conflict affiliation tendency has become a more general sex-specific characteristic.

Research reveals more general sex differences in the patterns of social bonds, both in adults and children. In some ways girls and women seem to be more strongly bonded than men and boys. For example, girls show higher levels of emotional support to their friends than boys, and women are better at interpersonal engagement and more sensitive to relationship inequalities than men [17]. However, research also shows an important distinction: boys and men interact in larger groups than girls and women, who in turn prefer to bond dyadically [18,19]. Moreover, data from a Yanomamö population in the Amazon basin show male coalitionary bonding beyond residential group membership [20]. These results are consistent with the Male Warrior hypothesis, supporting the increased general tendency of men to bond with each other as compared to women.

Conflict management is now more important than ever. There are several complex, international conflicts raging in different parts of the world, and senseless violence in its many forms causes pain and grief to all parties involved. Fortunately, we also have many ways to resolve conflicts. While much studied, human conflict management is often seen from a societal perspective, as something institutionally regulated and culturally complex. People may even think that it is only a cultural invention with no biological foundation and that the 'primate basics' do not apply to humans. Benenson and Wrangham show, however, that they most certainly do. Perhaps it is time to stress that friendly behavior to each other goes a long way.

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Figure 1. Human and chimpanzee males show more affiliation than females after conflicts.

### **In Brief**

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